ORIGINAL

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102

To: Chief, Enforcement Bureau
Chief, Wireless Telecommunications Bureau

CINGULAR WIRELESS LLC SUPPLEMENT TO SECOND QUARTERLY E911 IMPLEMENTATION REPORT

Cingular Wireless LLC ("Cingular"), by its attorneys and pursuant to the October 12, 2001 *Order* in this proceeding,[1] hereby supplements its Second Quarterly E911 Implementation Report to update the record to include information from preliminary tests of E-OTD capable handsets. This filing also includes information regarding E-OTD that was provided by vendors during the first meeting of the GSM Location Users Group.

I. PRELIMINARY RESULTS OF E-OTD CAPABLE HANDSET TESTING ON LIVE NETWORKS

A. Testing on Live Networks Utilizing Ericsson Infrastructure

In order to test E-OTD capable handsets on a live network utilizing Ericsson infrastructure, the installation of Serving Mobile Location Center ("SMLC") software and Location Monitoring Units ("LMUs") began in March in Cingular's GSM network in Hayward, California. By April 5, 2002, twenty (20) LMUs were installed and operational. Shortly

[1] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Request for Waiver by Cingular Wireless LLC*, CC Docket No. 94-102, FCC 01-206, *Order*, 16 FCC Rcd 18305 (rel. Oct. 12, 2001), *recon. pending* ("*Order*").

thereafter, Ericsson began testing to validate its E-OTD solution. Ericsson used E-OTD capable handsets from four (4) different vendors to test its E-OTD infrastructure.

Engineers from handset vendors did not participate in Ericsson's infrastructure validation testing at Ericsson's request. Ericsson indicated that Cingular could begin its own validation testing once Ericsson's tests were concluded on June 7, 2002. Cingular scheduled handset testing with three (3) handset vendors for Tuesday, June 11, 2002. On June 6, 2002, however, Cingular was notified by Ericsson that a defect had been discovered in its infrastructure software which impacted the ability to provide E-OTD assistance data to the handsets performing E-OTD measurements.[2] To alleviate this problem, software supplied to Ericsson by Cambridge Positioning Systems ("CPS") needed to be updated. Although the software update could not be obtained prior to the testing scheduled for June 11, the invited handset vendors all agreed that testing should still move forward.

On June 11, Cingular and three of its handset vendors commenced testing E-OTD capable handsets on live networks utilizing Ericsson infrastructure. Cingular identified 50 test points within the E-OTD coverage area for this testing. The initial testing was intended primarily to verify that the E-OTD capable handsets properly performed messaging (between the SMLC and the handsets) interoperability while operating on Ericsson infrastructure. Nevertheless, Cingular seized the opportunity to do some preliminary accuracy testing. Analysis of the data showed a great variance in the performance of different handsets. The lack of assistance data (*i.e.*, the CPS software upgrade) was raised as a potential cause of the differences. One of the handset vendors chose to conclude its testing in the market by mid-week due to uncertainty regarding the availability of the CPS software upgrade.

[2] It has since been discovered that some E-OTD capable handset implementations seem to depend more heavily on this E-OTD assistance data than do others.

Ericsson received the software patch for the assistance data functionality from CPS on June 13. The patch was installed by mid-day and testing (with the assistance data capability) resumed early afternoon. Initial test results indicated that the assistance data software patch in the SMLC may have improved the location accuracy for certain E-OTD capable handsets. It is believed that similar improvements in E-OTD location accuracy may have been obtained with the E-OTD capable handset developed by the vendor that dropped out of the test. Additional testing for all of Cingular's major handset suppliers is now being scheduled.

B. Testing on Live Networks Utilizing Nokia Infrastructure

In mid-May, the SMLC and LMUs necessary to test E-OTD capable handsets on live networks utilizing Nokia infrastructure were deployed in Cingular's Philadelphia, Pennsylvania market. Because Cingular utilizes both 1900 MHz and 850 MHz networks in this market, it provided an opportunity to test E-OTD on both bands.

Initial functionality testing commenced on June 1, 2002. By June 3, Cingular had deployed twenty (20) LMUs at cellsites identified for the 1900 MHz trial. Two handset vendors also arrived on this date to begin field interoperability testing. The initial week of handset testing identified that additional optimization of the network would be beneficial. Thus, testing was suspended by mid-week to permit further infrastructure optimization.

On June 11, 2002, Nokia Networks indicated that the network optimization had been completed. Three of Cingular's primary handset vendors then began testing their E-OTD capable handsets. This preliminary testing continued for approximately one week. One vendor returned for additional testing the following week.

Due to the nature of the data collection methodology, the results of the testing were not immediately known -- post processing of the data was required. Although this data processing has not yet been completed, a preliminary evaluation of the data indicates that, for a majority of

the attempts to obtain a location fix (70% or greater), the infrastructure estimated the location of the mobile by utilizing Cingular's Safety Net technology, rather than the E-OTD functionality. All indications are that the E-OTD functionality was not utilized in the majority of cases due to infrastructure issues. Nokia Networks is currently evaluating the test data to determine the precise cause of the problem. Cingular expects to initiate new handset testing on this infrastructure during the week of July 8, 2002, and will conduct testing on the 850 MHz network when equipment becomes available.

II. GSM LOCATION USERS GROUP

On May 1 and 2, 2002, Cingular participated in the first GSM Location Users Group ("Group") meeting in Seattle, Washington. The meeting was attended by representatives from Cingular, AT&T Wireless, VoiceStream Wireless, and CPS. The goal of the meeting was to discuss the advancement of E-OTD technology to meet FCC requirements. The Group concluded that the three common infrastructure vendors -- Ericsson, Nokia Networks, and Nortel -- should be asked to attend the next meeting and provide an update on their respective E-OTD capabilities.

The next meeting took place in Dallas, Texas on June 11, 2002, with the three infrastructure vendors in attendance. The vendors provided information regarding current E-OTD capabilities and the status of their interoperability and optimization testing. Each vendor was specifically asked about their ability to meet both a 100m/300m accuracy capability by the end of 2002, as well as a 50m/150m accuracy capability by October 1, 2003. Although the responses were not identical, each vendor's presentation had a similar theme: the initial

100m/300m requirement for E-OTD can be met by the end of 2002, but it is unclear whether the 50m/150m accuracy mark can be met by October 1, 2003.[3]

Conclusion

Cingular continues to work with the vendors to test E-OTD handsets and improve the accuracy associated with this Phase II E911 solution. Cingular will continue to update the Commission regarding the status of E-OTD once more information becomes available.

Respectfully submitted,

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June 27, 2002

[3] Cingular is in receipt of letters from Ericsson and Nokia Networks similar to those made available to the Commission by AT&T Wireless as attachments to its *ex parte* notices of June 21, 2002, in this docket. In addition, Cingular recently received from Ericsson proposed network designs for its E-OTD solution for two of Cingular's markets. For one of the markets, Ericsson recommended a network design that would meet the Commission's near-term accuracy requirement of 100m/300m at the 67%/95% thresholds, respectively. The design for the second market would achieve that near-term accuracy for 100m, but not 300m. Cingular expects to have further discussions with Ericsson in this regard.

DECLARATION OF WILLIAM E. CLIFT

I, William E. Clift, Chief Technical Officer of Cingular Wireless LLC ("Cingular"), make this declaration in support of the "Supplement to Second Quarterly E911 Implementation Report" filed by Cingular. In my role as Chief Technical Officer, I oversee Cingular's efforts to implement Phase II location technologies. I have reviewed the Supplement and declare under penalty of perjury that the information contained therein concerning E-OTD is accurate to the best of my knowledge, information and belief.

Executed June 27th, 2002

W. E. Clift

William E. Clift
Chief Technical Officer
Cingular Wireless

CERTIFICATE OF SERVICE

I, Joy M. Taylor, do hereby certify that on this 27th day of June 2002, a copy of the foregoing **Supplement to Second Quarterly E911 Implementation Report and Petition for Reconsideration** was served by U.S. Mail, first-class postage prepaid to the following:

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